

KY Valid Course List Science

HOW TO USE THIS DOCUMENT

This document contains a listing of course descriptions and parameters along with certifications that fit the parameters for a given course. The grade range and population information listed for each course are not absolute. Please choose the course that most closely represents the students in a given course.

EXAMPLE

John Q Middle School had 5th, 6th, and 7th grade students taking a Creative Art course. This course would be linked to course number **500711: Creative Art – Comprehensive**, which shows with a recommended grade range of 6th – 12th.

The courses listed in this document are not meant to replace the course titles and course numbers already in use at the school level. Schools will link their courses in the STI Valid Course List to courses listed in this document.

Schools may have created courses that are very unique in order to meet students' needs. If a course does not meet the definition or content of one contained in this document, please use course number **909999: School Defined Course**, and code the correct content through the LEAD report.

CERTIFICATIONS

It is important to note that the certificates listed are the ones that fit *ALL* of the parameters for a specific course – there may be other certificates that can teach it with slightly more restrictive parameters.

It is very important to note that not all of the certificates listed under a specific course will meet the Highly Qualified Teacher standards as defined by The No Child Left Behind Act of 2001. Please refer to the Highly Qualified guidance documents located on the Education Professional Standards Board (EPSB) website at <http://www.kyepsb.net/nclb.asp>.

In addition to Highly Qualified considerations, please take note of the following information from ***The Program of Studies for Kentucky Schools Primary-12*** with regard to middle school courses that are offered for high school credit.

High School Credit Earned in Middle School

It is expected that most students will earn these credits during their high school years. However, local school districts may offer these courses to middle level students if the following criteria are met:

- the content and the rigor of the course is the same as established in the *Program of Studies*
- the students demonstrate mastery of the middle level content as specified in the *Program of Studies*
- the district has criteria in place to make reasonable determination that the middle level student is capable of success in the high school course
- **the middle level course is taught by teachers with either secondary or middle level certification with appropriate content specialization**

Although middle level courses list the Provisional and Standard Elementary Certificates, Grades 1-8 as allowable under the parameters of these courses, they will not meet the above requirements for courses that are offered for high school credit.

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Please contact Robin Chandler in KDE's Division of Curriculum at 502-564-2106 with any questions on content and curricula.

Please contact EPSB's Division of Certification at 502-564-4606 with any questions on credentials or permissions.

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Science

(300000)

Science - Elementary/Middle (300100)

300150 - Physical Science 5

Grade Level: 5 - 5

Credits:

Description: Students will develop conceptual understandings of physical science through using scientific inquiry. In this course, students will experience physical science concepts of properties and changes of properties in matter, motions and forces, and transfer of energy, as described in Kentucky's Program of Studies for Intermediate Level Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Physical Science

Population: General

M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
AM50	Approval For Teaching Science In The Middle Grades 5-6
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
G50	Middle School Teaching Field: Science
D50	Approval For Teaching Middle School Science, Grades 5-9
J50	Junior High Major: Science
J52	Junior High Major: Chemistry
PATE	Provisional Alternative Training Program Certificate For Teaching In The Early Elementary, Grades K-5
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
KEL	Professional Certificate For Teaching In Elementary School, Primary Through Grade 5
KELI	Provisional Internship Certificate For Teaching In Elementary School, Primary Through Grade 5
M50	Endorsement For Teaching Science, Grades 5-8
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
X53	Emergency Certificate For Teaching Physics
TEEL	Temporary Certificate For Elementary, Grades P-5
COEL	Conditional One-Year Certificate For Elementary, Grades P-5
TES	Endorsement For Elementary And Secondary Classroom Teaching
XEL	Emergency Certificate For Teaching Elementary, Primary Through Grade 5
TPEL	Temporary Provisional Certificate For Early Elementary, Grades P-5
AJEL	Adjunct Instructor For Elementary, Grades P-5
KELL	Kentucky Elementary Limited, Grades P-5
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
PATE	Provisional Alternative Training Program Certificate For Teaching In The Early Elementary, Grades K-5
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
KEL	Professional Certificate For Teaching In Elementary School, Primary Through Grade 5

KELI	Provisional Internship Certificate For Teaching In Elementary School, Primary Through Grade 5
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
TEEL	Temporary Certificate For Elementary, Grades P-5
COEL	Conditional One-Year Certificate For Elementary, Grades P-5
TES	Endorsement For Elementary And Secondary Classroom Teaching
XEL	Emergency Certificate For Teaching Elementary, Primary Through Grade 5
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
AJEL	Adjunct Instructor For Elementary, Grades P-5
TPEL	Temporary Provisional Certificate For Early Elementary, Grades P-5
KELL	Kentucky Elementary Limited, Grades P-5
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
TE50	Temporary Certificate For Middle School Science, Grades 5-9
QG50	Teaching Field: Middle Grades Science
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
K50L	Kentucky Middle School Science Limited, Grades 5-9
X52	Emergency Certificate For Teaching Chemistry
AJG5	Adjunct Instructor for Middle Grades Science

300155 - Integrated Science 5

Grade Level: 5 - 5

Credits:

Description: In this course, students experience transfer of energy, structure of the Earth system, and structure and function in living systems, as outlined in Kentucky's Program of Studies for Intermediate Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Integrated Science 1

Population: General

TE50	Temporary Certificate For Middle School Science, Grades 5-9
AM50	Approval For Teaching Science In The Middle Grades 5-6
G50	Middle School Teaching Field: Science
D50	Approval For Teaching Middle School Science, Grades 5-9
PATE	Provisional Alternative Training Program Certificate For Teaching In The Early Elementary, Grades K-5
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
KEL	Professional Certificate For Teaching In Elementary School, Primary Through Grade 5
KELI	Provisional Internship Certificate For Teaching In Elementary School, Primary Through Grade 5
M50	Endorsement For Teaching Science, Grades 5-8
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
TEEL	Temporary Certificate For Elementary, Grades P-5
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
COEL	Conditional One-Year Certificate For Elementary, Grades P-5
XM50	Emergency Certificate For Middle School Science
TES	Endorsement For Elementary And Secondary Classroom Teaching

X54	Emergency Certificate For Teaching Earth Science
XEL	Emergency Certificate For Teaching Elementary, Primary Through Grade 5
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
TPEL	Temporary Provisional Certificate For Early Elementary, Grades P-5
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
AJEL	Adjunct Instructor For Elementary, Grades P-5
KELL	Kentucky Elementary Limited, Grades P-5
K51	Junior High Semi-Major: Biology
K50L	Kentucky Middle School Science Limited, Grades 5-9
J50	Junior High Major: Science
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
KEL	Professional Certificate For Teaching In Elementary School, Primary Through Grade 5
KELI	Provisional Internship Certificate For Teaching In Elementary School, Primary Through Grade 5
M50	Endorsement For Teaching Science, Grades 5-8
PATE	Provisional Alternative Training Program Certificate For Teaching In The Early Elementary, Grades K-5
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
TES	Endorsement For Elementary And Secondary Classroom Teaching
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
XEL	Emergency Certificate For Teaching Elementary, Primary Through Grade 5
TPEL	Temporary Provisional Certificate For Early Elementary, Grades P-5
COEL	Conditional One-Year Certificate For Elementary, Grades P-5
KELL	Kentucky Elementary Limited, Grades P-5
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
AJEL	Adjunct Instructor For Elementary, Grades P-5
TEEL	Temporary Certificate For Elementary, Grades P-5
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
J51	Junior High Major: Biology
J54	Junior High Major: Biology-Health
K52	Junior High Semi-Major: Chemistry
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
QG50	Teaching Field: Middle Grades Science
QG50	Teaching Field: Middle Grades Science
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
J52	Junior High Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
AJG5	Adjunct Instructor for Middle Grades Science
AJG5	Adjunct Instructor for Middle Grades Science

300160 - Life Science 6

Grade Level: 6 - 6

Credits:

Description: Students will develop conceptual understandings of life science through using scientific inquiry. In this course, students will experience life science concepts of structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems, and diversity and adaptations of organisms, as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry

approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Life Science

Population: General

AM50	Approval For Teaching Science In The Middle Grades 5-6
K51	Junior High Semi-Major: Biology
G50	Middle School Teaching Field: Science
D50	Approval For Teaching Middle School Science, Grades 5-9
J50	Junior High Major: Science
J51	Junior High Major: Biology
J54	Junior High Major: Biology-Health
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
X51	Emergency Certificate For Teaching Biology
TES	Endorsement For Elementary And Secondary Classroom Teaching
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
XM50	Emergency Certificate For Middle School Science
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
TES	Endorsement For Elementary And Secondary Classroom Teaching
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
M50	Endorsement For Teaching Science, Grades 5-8
TE50	Temporary Certificate For Middle School Science, Grades 5-9
QG50	Teaching Field: Middle Grades Science
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
AJG5	Adjunct Instructor for Middle Grades Science

300166 - Integrated Science 6

Grade Level: 6 - 6

Credits:

Description: In this course, students experience motion and forces, Earth in the Solar System, regulation and behavior, and populations and ecosystems, as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Integrated Science 2

Population: General

PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8

SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
TES	Endorsement For Elementary And Secondary Classroom Teaching
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
K50L	Kentucky Middle School Science Limited, Grades 5-9
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
AM50	Approval For Teaching Science In The Middle Grades 5-6
XM50	Emergency Certificate For Middle School Science
M50	Endorsement For Teaching Science, Grades 5-8
J50	Junior High Major: Science
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
G50	Middle School Teaching Field: Science
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
J51	Junior High Major: Biology
J54	Junior High Major: Biology-Health
K52	Junior High Semi-Major: Chemistry
TE50	Temporary Certificate For Middle School Science, Grades 5-9
QG50	Teaching Field: Middle Grades Science
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
D50	Approval For Teaching Middle School Science, Grades 5-9
J52	Junior High Major: Chemistry
K51	Junior High Semi-Major: Biology
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
X54	Emergency Certificate For Teaching Earth Science
AJG5	Adjunct Instructor for Middle Grades Science

300169 - Grade 6: Environmental Studies

Grade Level: 6 - 6

Credits:

Description: This sixth grade course model is an integrated approach to the study of our environment and the factors that affect it. All content from the sixth grade science portion of the Program of Studies is presented in environmental contexts. Sample activities are provided to illustrate an instructional alliance that initiates student inquiry, builds understanding of scientific concepts, and promotes applications to real-life situations. The sample activities make connections to other content areas where the connection is natural and authentic. Thus, students are provided opportunities to reinforce and extend the content and process skills they have learned in other subject areas. Suggested activities are not comprehensive; that is, they are starting points to plan instruction for the required content and may need to be adjusted for individual students and school situations.

Content: Environmental Science

Population: General

AM50	Approval For Teaching Science In The Middle Grades 5-6
J51	Junior High Major: Biology
J54	Junior High Major: Biology-Health
K51	Junior High Semi-Major: Biology
X51	Emergency Certificate For Teaching Biology
XM50	Emergency Certificate For Middle School Science
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9

MS50	Endorsement For Teaching Middle School Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
K50L	Kentucky Middle School Science Limited, Grades 5-9
TE50	Temporary Certificate For Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
J50	Junior High Major: Science
G50	Middle School Teaching Field: Science
D50	Approval For Teaching Middle School Science, Grades 5-9
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
TES	Endorsement For Elementary And Secondary Classroom Teaching
X54	Emergency Certificate For Teaching Earth Science
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
QG50	Teaching Field: Middle Grades Science
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
AJG5	Adjunct Instructor for Middle Grades Science

300170 - Earth Space Science 7

Grade Level: 7 - 7

Credits:

Description: Students will develop conceptual understandings of earth/space science through using scientific inquiry. In this course, students will experience earth/space concepts of structure of the Earth system, Earth's history, and Earth in the Solar System, as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Earth-Space Science

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B54	Teaching Major: Biology-Health
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
D50	Approval For Teaching Middle School Science, Grades 5-9
J50	Junior High Major: Science
J52	Junior High Major: Chemistry
K23	Junior High Semi-Major: Geography-Geology

PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
B56	Teaching Major: Earth Science
M50	Endorsement For Teaching Science, Grades 5-8
C57	Teaching Minor: Geology
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
TES	Endorsement For Elementary And Secondary Classroom Teaching
X54	Emergency Certificate For Teaching Earth Science
B51	Teaching Major: Biology
G50	Middle School Teaching Field: Science
R51	Area Specialization: Science Limited To Biology
R56	Area Specialization: Science Limited To Earth Science
K50L	Kentucky Middle School Science Limited, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
WG50	Professional Certificate For Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
QG50	Teaching Field: Middle Grades Science
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
TE50	Temporary Certificate For Middle School Science, Grades 5-9
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry
AJG5	Adjunct Instructor for Middle Grades Science
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
KG50	Professional Certificate For Middle Grades Science, Grades 5-9

300177 - Integrated Science 7

Grade Level: 7 - 7

Credits:

Description: In this course, students experience properties and changes of properties in matter, Earth's history, reproduction and heredity, and diversity and adaptations of organisms, as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach uses concrete hand-on experiences that requires students to apply critical thinking skills

Content: Integrated Science 3

Population: General

R51	Area Specialization: Science Limited To Biology
B50	Teaching Major: Science
A50	Area Specialization: Science
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
B52	Teaching Major: Chemistry
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8

SEA	Standard Elementary Certificate, Grades 1-8
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
TES	Endorsement For Elementary And Secondary Classroom Teaching
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
B57	Teaching Major: Geology
C51	Teaching Minor: Biology
R56	Area Specialization: Science Limited To Earth Science
K50L	Kentucky Middle School Science Limited, Grades 5-9
C23	Teaching Minor: Geography-Geology
XM50	Emergency Certificate For Middle School Science
M50	Endorsement For Teaching Science, Grades 5-8
J50	Junior High Major: Science
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
G50	Middle School Teaching Field: Science
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
C50	Teaching Minor: Science
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
J54	Junior High Major: Biology-Health
K52	Junior High Semi-Major: Chemistry
TE50	Temporary Certificate For Middle School Science, Grades 5-9
QG50	Teaching Field: Middle Grades Science
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
B53	Teaching Major: Physics
A70	Area Specialization: Mathematics-Physical Science
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
D50	Approval For Teaching Middle School Science, Grades 5-9
J51	Junior High Major: Biology
J52	Junior High Major: Chemistry
K51	Junior High Semi-Major: Biology
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry
X54	Emergency Certificate For Teaching Earth Science
AJG5	Adjunct Instructor for Middle Grades Science

300188 - Integrated Science 8

Grade Level: 8 - 8

Credits:

Description: In this course, students will be engaged in activities which will develop their understandings about Life, Earth and Space, and Physical Science concepts, as well as unifying ideas and concepts such as Energy Transformations and Interdependence as described in Kentucky's Program of Studies for Middle Level Science. A scientific inquiry approach involving the use of concrete hands-on experiences that requires students to apply critical thinking skills is embedded in this course.

Content: Integrated Science 4

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
C53	Teaching Minor: Physics

C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
B52	Teaching Major: Chemistry
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
TES	Endorsement For Elementary And Secondary Classroom Teaching
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
B57	Teaching Major: Geology
C51	Teaching Minor: Biology
R56	Area Specialization: Science Limited To Earth Science
K50L	Kentucky Middle School Science Limited, Grades 5-9
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
XM50	Emergency Certificate For Middle School Science
M50	Endorsement For Teaching Science, Grades 5-8
J50	Junior High Major: Science
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
G50	Middle School Teaching Field: Science
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
C50	Teaching Minor: Science
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
J54	Junior High Major: Biology-Health
K51	Junior High Semi-Major: Biology
K52	Junior High Semi-Major: Chemistry
K56	Junior High Semi-Major: Earth Science
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12

TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
TE50	Temporary Certificate For Middle School Science, Grades 5-9
TECH	Temporary Certificate For Chemistry, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
QG50	Teaching Field: Middle Grades Science
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
X51	Emergency Certificate For Teaching Biology
B53	Teaching Major: Physics
A70	Area Specialization: Mathematics-Physical Science
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
D50	Approval For Teaching Middle School Science, Grades 5-9
J51	Junior High Major: Biology
J52	Junior High Major: Chemistry
K53	Junior High Semi-Major: Physics
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
R51	Area Specialization: Science Limited To Biology
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry
X54	Emergency Certificate For Teaching Earth Science
AJG5	Adjunct Instructor for Middle Grades Science
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12

300195 - Forensics (6-8)

Grade Level: 6 - 8

Credits: 0

Description: This course is a problem-based inquiry course dealing with Forensic sciences.

Content: Forensic Science

Population: General

PEA	Provisional Elementary Certificate, Grades 1-8
PEB	Provisional Elementary Certificate, Grades 1-8
PEBF	Provisional Elementary Certificate, Grades 1-8
ELE	Endorsement For Elementary School Classroom Teaching, Grades 1-8
SEB	Standard Elementary Certificate, Grades 1-8
SEMF	Standard Elementary Certificate, Grades 1-8
SEM	Standard Elementary Certificate, Grades 1-8
SEA	Standard Elementary Certificate, Grades 1-8
TES	Endorsement For Elementary And Secondary Classroom Teaching
J52	Junior High Major: Chemistry
K52	Junior High Semi-Major: Chemistry
K53	Junior High Semi-Major: Physics
K56	Junior High Semi-Major: Earth Science
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
D50	Approval For Teaching Middle School Science, Grades 5-9
G50	Middle School Teaching Field: Science

J50	Junior High Major: Science
J51	Junior High Major: Biology
J54	Junior High Major: Biology-Health
K51	Junior High Semi-Major: Biology
X51	Emergency Certificate For Teaching Biology
XM50	Emergency Certificate For Middle School Science
M50R	Probationary Certificate For Teaching Middle School Science, Grades 5-9
MS50	Endorsement For Teaching Middle School Science, Grades 5-9
KG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
KG50	Professional Certificate For Middle Grades Science, Grades 5-9
K50L	Kentucky Middle School Science Limited, Grades 5-9
TE50	Temporary Certificate For Middle School Science, Grades 5-9
CO50	Conditional One-Year Certificate For Middle School Science, Grades 5-9
AJG5	Adjunct Instructor for Middle Grades Science
WG50	Professional Certificate for Middle Grades Science, Grades 5-9
WG5I	Provisional Internship Certificate For Middle Grades Science, Grades 5-9
TPG5	Temporary Provisional Certificate For Middle Grades Science, Grades 5-9
QG50	Teaching Field: Middle Grades Science

Science - High School Life Science (302600)

302601 - Life Science/Biology 1

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of life science, as outlined in Kentucky's Program of Studies, through the use of scientific inquiry. They experience life science concepts such as the cellular organization; molecular basis of heredity; biological change; interdependence of organisms; matter, energy and organization in living systems; and behavior of organisms. A scientific inquiry approach uses concrete, hands-on experiences that require students to apply critical-thinking skills. It is suggested that the physical science course be taken before either Earth/space science or life science.

Content: Life Science

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302602 - Biology II

Grade Level: 9 - 12

Credits: 1

Description: This is a second-level biology course for average or college track students.

Content: Biology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science

B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302603 - Honors Biology

Grade Level: 9 - 12

Credits: 1

Description: This course allows students to attain all the concepts contained in the description for Biology, with the opportunity provided for students to progress ahead of the non-honors course.

Content: Biology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302611 - Biochemistry

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include biochemical evolution, macromolecules, metabolism, glycolysis, photosynthesis, and respiration.

Content: Biochemistry

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
C51	Teaching Minor: Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
C53	Teaching Minor: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
B52	Teaching Major: Chemistry
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
R51	Area Specialization: Science Limited To Biology
X51	Emergency Certificate For Teaching Biology
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
TEBI	Temporary Certificate For Biology, Grades 8-12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
B53	Teaching Major: Physics
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

302612 - Botany

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of the plant kingdom, including plant evolution, classification, plant ecology, and domestic plants.

Content: Botany**Population:** General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302613 - Microbiology

Grade Level: 9 - 12**Credits:** 1**Description:** This course focuses on the study of microbiological techniques, viruses, fungi, protozoans, bacteria, and pathogenic organisms.**Content:** Microbiology**Population:** General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B54	Teaching Major: Biology-Health
B51	Teaching Major: Biology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302614 - Ecology

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include biotic and abiotic factors, energy flow, mineral cycles, ecosystems, and biomes.

Content: Ecology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302615 - Zoology

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of the animal kingdom, including organ systems and dissection.

Content: Zoology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
B51	Teaching Major: Biology
A50	Area Specialization: Science
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302616 - Forensics

Grade Level: 9 - 12

Credits: 1 credit

Description: This course is a problem-based inquiry course dealing with Forensic sciences.

Content: Forensic Science

Population: General

C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
B52	Teaching Major: Chemistry
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TECH	Temporary Certificate For Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B23	Teaching Major: Geography-Geology
R56	Area Specialization: Science Limited To Earth Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B50	Teaching Major: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TEBI	Temporary Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12

CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
B53	Teaching Major: Physics
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302618 - Medical Science

Grade Level: 9 - 12

Credits: 1

Description: This one-credit course uses health occupations as a vehicle to present the life science content outlined in the Program of Studies. The course is interdisciplinary in nature and integrates academic expectations and activities with the disciplines of life science, mathematics, health, social studies, language arts, arts and humanities, and vocational studies. During their study of medical science, students will gain an understanding of the normal structure and function of the human body through scientific inquiry. Life science conceptual understandings, applications, and connections make this science relevant to students. Anatomy, physiology, physics, and chemistry concepts are reinforced with real-life analogies and health-related examples are used to illustrate potentially difficult scientific concepts.

Content: Medical Science for the Life Science Component within the Science Requirement

Population: General

A78	Area Specialization: Health Occupations
210	Health Services
211	Radiology Technology
X210	Emergency Certificate For Health Services
200	Allied Health Science
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
R51	Area Specialization: Science Limited To Biology
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
B51	Teaching Major: Biology
C51	Teaching Minor: Biology
B54	Teaching Major: Biology-Health
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
TEBI	Temporary Certificate For Biology, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
C50	Teaching Minor: Science
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology

302621 - Marine Biology

Grade Level: 9 - 12

Credits: 1

Description: This course addresses key concepts related to marine science, including ocean zones, seawater, habitats, and marine taxonomy.

Content: Marine Biology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302623 - IB Environmental Systems

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. This course may include, but is not limited to, the topics from the Environmental Systems Standard Level syllabus specified by the International Baccalaureate Organization. Topics may include: systems and models, the ecosystem, global cycles and physical systems, human population and carrying capacity, analyzing ecosystems, impacts of resource exploitation and conservation & biodiversity, pollution management.

Content: Ecology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12

CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302631 - Anatomy

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include plant structure, animal structure, tissues, organs, and systems.

Content: Anatomy and Physiology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302643 - Pre IB Biology

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Biology.

Content: Life Science

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12

WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302644 - IB Biology 2

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Biology.

Content: Life Science

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302645 - IB Biology 3

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Biology.

Content: Life Science

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science

B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302646 - AP Biology

Grade Level: 9 - 12

Credits: 1

Description: AP Biology is designed to be the equivalent of a college introductory biology course usually taken by biology majors during their first year. It aims to provide students with the conceptual framework, factual knowledge and analytical skills necessary to deal critically with the rapidly changing science of biology. The two main goals of AP Biology are to help students develop a conceptual framework for modern biology and to help students gain an appreciation of science as a process. The ongoing information explosion in biology makes these goals even more challenging. Primary emphasis in an Advanced Placement Biology course should be on developing an understanding of concepts rather than on memorizing terms and technical details. Essential to this conceptual understanding are the following: a grasp of science as a process rather than as an accumulation of facts; personal experience in scientific inquiry; recognition of unifying themes that integrate the major topics of biology; and application of biological knowledge and critical thinking to environmental and social concerns. AP Biology is representative of the topics covered by the AP exam. Accordingly, goals have been set for percentage coverage of three general areas: 40% Molecules and Cells, 25% Heredity and Evolution, 25% Organisms and Populations, 50% Students should have successfully completed high school biology and high school chemistry. NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Biology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
X51	Emergency Certificate For Teaching Biology
C51	Teaching Minor: Biology
C50	Teaching Minor: Science

CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302651 - Human Physiology

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of the human body, including nutrition concepts, digestive system, circulatory system, nervous system, and the reproductive system.

Content: Anatomy and Physiology

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302655 - Nutritional and Food Science

Grade Level: 9 - 12

Credits: 1

Description: This interdisciplinary course emphasizes the Life Sciences, as described in Kentucky's Program of Studies, via the context of nutrition and food science.

Content: Nutritional and Food Science for the Life Science Component within the Science Requirement

Population: General

S926	Approval For Teaching Child Care Services Gainful)
WFAI	Provisional Internship Certificate For Teaching Family And Consumer Science, Grades 5 Through 12
A92	Area Specialization: Home Economics Vocational
CFAI	Provisional Internship Certificate For College Faculty, Family And Consumer Science, Grades 8-12
A93	Area Specialization: Home Economics Non-Vocational
B92	Teaching Major: Home Economics Vocational
CFA	Professional Certificate For College Faculty, Family And Consumer Science, Grades 8-12
S927	Approval For Teaching Clothing Services Gainful)
S928	Approval For Teaching Home Furnishings Gainful)
S934	Approval For Teaching Professional Sewing
S937	Approval For Teaching Home And Community Services (Gainful)
TPFA	Temporary Provisional Certificate For Family And Consumer Science, Grades 5-12
WFA	Professional Certificate For Teaching Family And Consumer Science, Grades 5 Through 12

302661 - Genetics

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include mutation, heredity, genetic principles, DNA and RNA, recombination, and viruses.

Content: Life Science

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302680 - AgriBiology

Grade Level: 9 - 12

Credits: 1

Description: This one-credit course uses agricultural contexts to present the life science content outlined in the Program of Studies. As students study practical agricultural concepts, they apply scientific ways of thinking and working to real-life problems. During their study of agri-biology, students perform many practical tasks. They create models, extract DNA, analyze DNA fingerprints, construct tables and graphs to classify and analyze data, and test soils. Students also participate in cooperative and collaborative groups, use technology to solve problems, and participate in field trips to apply scientific concepts to agricultural and environmental problems. Students develop an understanding of many concepts such as cell structure and function, morphology and physiology of agriculturally significant animals, heredity principles and inheritance patterns, genetic engineering, animal behavior, biological change, interdependence of plants and animals, and the flow of matter and energy through ecosystems.

Content: Agribiology for Life Science Credit

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B54	Teaching Major: Biology-Health
B51	Teaching Major: Biology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12

KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
KAG	Professional Certificate For Teaching Agriculture, Grades 5 Through 12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
TEAG	Temporary Certificate For Agriculture, Grades 5-12
CAG	Professional Certificate For College Faculty, Agriculture, Grades 5-12
TPAG	Temporary Provisional Certificate For Teaching Agriculture, Grades 5-12
CAGI	Provisional Internship Certificate For College Faculty, Agriculture, Grades 5-12
COAG	Conditional One-Year Certificate For Teaching Agriculture, Grades 5-12
KAGI	Provisional Internship Certificate For Teaching Agriculture, Grades 5 Through 12
A98	Area Specialization: Agriculture Non-Vocational
B90	Teaching Major: Agriculture Vocational
S901	Approval For Teaching Agricultural Resources
S906	Approval For Teaching Horticulture
S908	Approval For Teaching Agricultural Mechanics
S909	Approval For Teaching Forestry
X90	Emergency Certificate For Teaching Agriculture
A90	Area Specialization: Agriculture Vocational
B98	Teaching Major: Agriculture Non-Vocational
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
WAG	Professional Certificate For Teaching Agriculture, Grades 5 Through 12
WAGI	Provisional Internship Certificate For Teaching Agriculture, Grades 5 Through 12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302685 - Agriscience

Grade Level: 9 - 12

Credits: 1

Description: This is an interdisciplinary course that deals with the Life Sciences, as described in Kentucky's Program of Studies, via agricultural contexts.

Content: Agriscience for Life Science Credit

Population: General

KAG	Professional Certificate For Teaching Agriculture, Grades 5 Through 12
CAG	Professional Certificate For College Faculty, Agriculture, Grades 5-12
TPAG	Temporary Provisional Certificate For Teaching Agriculture, Grades 5-12
CAGI	Provisional Internship Certificate For College Faculty, Agriculture, Grades 5-12
COAG	Conditional One-Year Certificate For Teaching Agriculture, Grades 5-12
KAGI	Provisional Internship Certificate For Teaching Agriculture, Grades 5 Through 12
TEAG	Temporary Certificate For Agriculture, Grades 5-12
A98	Area Specialization: Agriculture Non-Vocational
B98	Teaching Major: Agriculture Non-Vocational
S901	Approval For Teaching Agricultural Resources
S906	Approval For Teaching Horticulture
S908	Approval For Teaching Agricultural Mechanics
S909	Approval For Teaching Forestry
X90	Emergency Certificate For Teaching Agriculture
A90	Area Specialization: Agriculture Vocational
B90	Teaching Major: Agriculture Vocational
WAG	Professional Certificate For Teaching Agriculture, Grades 5 Through 12

WAGI Provisional Internship Certificate For Teaching Agriculture, Grades 5 Through 12

302698 - Intro Biology with Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of Biology and Earth/Space Science through the use of scientific inquiry. They experience biology and Earth/space science concepts, as outlined in Kentucky's Program of Studies, such as structure and function of cells; molecular basis of heredity; biological change; changes in the Earth system; interdependence of organisms; matter, energy and organization in living systems; and the behavior of organisms. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills. For this model the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Content: Life Science

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

302699 - Special Topics: Life Science

Grade Level: 9 - 12

Credits: 1

Description: The content of this Life Science course is determined by the teacher/student.

Content: Life Science

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
R51	Area Specialization: Science Limited To Biology

WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

Science - High School Integrated (303000)

303091 - Integrated Science I

Grade Level: 9 - 12

Credits: 1

Description: This inquiry based introductory course is designed around the themes of patterns of change and systems, order, and organization. Students examine the organization of the universe by beginning with the fundamental laws that give order, continue with the way these laws affect the Earth and the organization of life, and conclude with how life responds to these laws. Guiding Questions (based on content described in Kentucky's Program of Studies for High School Science): How can we use forces and the laws of motion to understand the motion of objects? How do observable structures on Earth's surface enable us to determine the internal energy sources of the Earth? How can we observe the effect of the Sun's energy on the Earth's surface and atmosphere? How does Earth's internal and external sources of energy affect Earth's geochemical cycles? How are organisms dependent on the cycling of atoms and molecules, energy flow, and each other in an ecosystem? How do behavioral responses to stimuli ensure individual survival and reproductive success for species? When energy is transferred what forms can it assume?

Content: Integrated Science 1

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
B23	Teaching Major: Geography-Geology
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B54	Teaching Major: Biology-Health
B51	Teaching Major: Biology
C53	Teaching Minor: Physics
B57	Teaching Major: Geology
C50	Teaching Minor: Science
C51	Teaching Minor: Biology
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
R51	Area Specialization: Science Limited To Biology
C23	Teaching Minor: Geography-Geology
M50	Endorsement For Teaching Science, Grades 5-8
B52	Teaching Major: Chemistry
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics

TECH	Temporary Certificate For Chemistry, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
A70	Area Specialization: Mathematics-Physical Science
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
B53	Teaching Major: Physics
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

303092 - Integrated Science II

Grade Level: 9 - 12

Credits: 1

Description: The theme of this inquiry based course is constancy and change over time. Students examine constancy in the natural world as well as changes that continually occur. Students examine the formation of matter and energy, properties and interactions, formation of the solar system, and conclude with the constancy of matter and energy in living systems. Guiding Questions(based on content described in Kentucky's Program of Studies for High School Science): What are the components and structure of the universe? How are chemical and physical properties of matter related to the structure of matter? What happens when energy interacts with matter? What evidence can be found that the Earth and solar system have changed over time? What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms? What processes are involved in the flow of matter and energy through and between living systems and the physical environment? How does the law of conservation of energy help me understand the

movement of energy? Approval to offer this course must be made on an individual basis. Approval will be based upon the relative proportions of science disciplines addressed in the course syllabus and the credentials of the assigned teacher.

Content: Integrated Science 2

Population: General

303093 - Integrated Science III

Grade Level: 9 - 12

Credits: 1

Description: This inquiry based course is developed around the themes of evidence, models, and explanation. Students examine the evidence and models that scientists use to explain the natural world in order to expand on the concepts introduced in Integrated Science I and II. The course is designed to promote ways of applying and integrating scientific ways of thinking to daily life. Guiding Questions(based on content described in Kentucky's Program of Studies for High School Science): How do observable properties of matter enable us to determine the structure of atoms? What evidence can we find that the universe is in the process of continuous change? What causes chemical reactions that affect our daily lives? How are Earth's chemical reservoirs affected by the internal and external sources of energy? How do cell structures, functions, and processes affect living things? How does DNA transfer genetic information of organisms to the next generation? How does the tendency for everything to become less organized help me understand the movement of energy? Approval to offer this course must be made on an individual basis. Approval will be based upon the relative proportions of science disciplines addressed in the course syllabus and the credentials of the assigned teacher.

Content: Integrated Science 3

Population: General

303099 - Special Topics, Interdisciplinary

Grade Level: 9 - 12

Credits: 1

Description: This course description is reserved for interdisciplinary classes involving one or more content areas other than science. This code is to be used when credit for the class is given in science and the teacher of record is science certified. Appropriate certifications to offer this class shall be determined based upon the relative proportions of science disciplines included in the course syllabus.

Content: Integrated Science 4

Population: General

Science - High School Physical Sciences (304000)

304021 - Physical Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of physical science, as outlined in Kentucky's Program of Studies, through the use of scientific inquiry. They experience physical science concepts such as structure of atoms, structure and properties of matter, chemical reactions, motions and forces, conservation of energy and increase in disorder, and interactions of energy and matter. A scientific inquiry approach uses concrete, hands-on experiences that require students to apply critical-thinking skills. It is suggested that the physical science course be taken before either Earth/space science or life science.

Content: Physical Science

Population: General

CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C23	Teaching Minor: Geography-Geology
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12

CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
X52	Emergency Certificate For Teaching Chemistry
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304521 - Chemistry I

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on problem solving techniques; bonding; equilibrium; equations. Students develop a conceptual understanding of chemistry content, included in the Program of Studies, through the use of scientific inquiry.

Content: Chemistry

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304522 - Chemistry II

Grade Level: 9 - 12

Credits: 1

Description: This college level course focuses on the study of the structure of matter, chemical kinetics, solution chemistry, and laboratory techniques.

Content: Chemistry

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304523 - Pre IB Chemistry 1

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Chemistry.

Content: Chemistry

Population: General

B50	Teaching Major: Science
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A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304524 - IB Chemistry 2

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Chemistry.

Content: Chemistry

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology

B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304525 - IB Chemistry 3

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Chemistry.

Content: Chemistry

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12

R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304526 - AP Chemistry

Grade Level: 9 - 12

Credits: 1

Description: AP Chemistry is the equivalent to a general Chemistry course usually taken in the first year of college. It is designed to comply with College Board recommendations to prepare students for an AP Exam in Chemistry. The course helps build students' understanding of the nature and reactivity of matter. The course begins with the structure of atoms, molecules, and ions; then students explore how that structure lets us predict and quantify the chemical reactions that substances undergo. AP Chemistry will enable you to develop an understanding of chemical concepts and become skilled at solving quantitative chemical problems through a combination of instructional activities. Suggested pre-requisites are Introduction to Chemistry and Algebra II. AP Chemistry is a full credit, two-semester course. NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Chemistry

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
C53	Teaching Minor: Physics
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
B52	Teaching Major: Chemistry
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
B53	Teaching Major: Physics
R52	Area Specialization: Science Limited To Chemistry

C52 Teaching Minor: Chemistry

304527 - Honors Chemistry

Grade Level: 9 - 12

Credits: 1

Description: This course allows students to attain all the concepts contained in the description for Chemistry, with the opportunity provided for students to progress ahead of the non-honors course.

Content: Chemistry

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304598 - Intro Chemistry with Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of Chemistry and Earth/Space Science through the use of scientific inquiry. They experience chemistry and Earth/space science concepts such as the structure of atoms, structure and properties of matter, chemical reactions, geochemical cycles, and formation and ongoing changes of the universe. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills. For this course, the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Content: Chemistry**Population:** General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304599 - Special Topics: Chemistry

Grade Level: 9 - 12**Credits:** 1**Description:** The content of this Chemistry course is determined by the teacher/student.**Content:** Chemistry**Population:** General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12

C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
TECH	Temporary Certificate For Chemistry, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304611 - Earth Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of Earth/space science, as outlined in Kentucky's Program of Studies, through the use of scientific inquiry. They experience Earth/space concepts such as energy in the Earth system, geochemical cycles, formation and ongoing changes of the Earth system, and formation and ongoing changes of the universe. A scientific inquiry approach uses concrete, hands-on experiences that require students to apply critical thinking skills. It is suggested that the physical science course be taken before either Earth/space science or life science.

Content: Earth-Space Science

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B54	Teaching Major: Biology-Health
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
M50	Endorsement For Teaching Science, Grades 5-8
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science

TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
B51	Teaching Major: Biology
R51	Area Specialization: Science Limited To Biology
R56	Area Specialization: Science Limited To Earth Science
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304612 - Astronomy

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of basic astronomical principles, stars, planets, and galaxies.

Content: Astronomy

Population: General

CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
X53	Emergency Certificate For Teaching Physics
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
KPH	Professional Certificate For Teaching Physics, Grades 8-12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12

CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry
AJPH	Adjunct Instructor For Physics, Grades 8-12

304613 - Meteorology

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of weather, the atmosphere, clouds, and frontal weather conditions.

Content: Earth Science

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B54	Teaching Major: Biology-Health
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C50	Teaching Minor: Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
M50	Endorsement For Teaching Science, Grades 5-8
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
B51	Teaching Major: Biology
R51	Area Specialization: Science Limited To Biology
R56	Area Specialization: Science Limited To Earth Science
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
C56	Teaching Minor: Earth Science
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304614 - Oceanography

Grade Level: 9 - 12

Credits: 1

Description: This course focuses on the study of ocean landscapes, waves, currents, ocean ecology, and estuaries.

Content: Oceanography

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C57	Teaching Minor: Geology
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C23	Teaching Minor: Geography-Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
B23	Teaching Major: Geography-Geology
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
C52	Teaching Minor: Chemistry

304620 - Environmental Science

Grade Level: 9 - 12

Credits: 1

Description: This course addresses topics of environmental interest/impact such as water pollution, conservation, forestry and air pollution.

Content: Environmental Science

Population: General

KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X51	Emergency Certificate For Teaching Biology
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
AJBI	Adjunct Instructor For Biology, Grades 8-12
TEBI	Temporary Certificate For Biology, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science

B51	Teaching Major: Biology
B54	Teaching Major: Biology-Health
C51	Teaching Minor: Biology
B23	Teaching Major: Geography-Geology
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
X54	Emergency Certificate For Teaching Earth Science
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
R51	Area Specialization: Science Limited To Biology
R56	Area Specialization: Science Limited To Earth Science
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12

304621 - Honors Earth Space Science

Grade Level: 9 - 12

Credits: 1

Description: This course allows students to attain all the concepts contained in the description for Earth/Space Science, with the opportunity provided for students to progress ahead of the non-honors course.

Content: Earth-Space Science

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B54	Teaching Major: Biology-Health
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science

R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
M50	Endorsement For Teaching Science, Grades 5-8
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
B51	Teaching Major: Biology
R51	Area Specialization: Science Limited To Biology
R56	Area Specialization: Science Limited To Earth Science
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304622 - AP Environmental Science

Grade Level: 9 - 12

Credits: 1

Description: NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies. This AP course focuses on earth systems & resources, the living world, population, land & water use, energy resources and consumption, pollution and global change.

Content: AP Environmental Science

Population: General

TEBI	Temporary Certificate For Biology, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
COCH	Conditional One-Year Certificate For Chemistry, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
B51	Teaching Major: Biology
C53	Teaching Minor: Physics
B54	Teaching Major: Biology-Health
B57	Teaching Major: Geology
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
KBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
R51	Area Specialization: Science Limited To Biology
KCHI	Provisional Internship Certificate For Teaching Chemistry Grades 8 Through 12
B52	Teaching Major: Chemistry
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12

WBI	Professional Certificate For Teaching Biological Science, Grades 8 Through 12
WBII	Provisional Internship Certificate For Teaching Biological Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics
TECH	Temporary Certificate For Chemistry, Grades 8-12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
COBI	Conditional One-Year Certificate For Biology, Grades 8-12
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
AJBI	Adjunct Instructor For Biology, Grades 8-12
TPBI	Temporary Provisional Certificate For Biology, Grades 8-12
TPCH	Temporary Provisional Certificate For Teaching Chemistry, Grades 8 Through 12
WCH	Professional Certificate For Teaching Chemistry, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
KCH	Professional Certificate For Teaching Chemistry, Grades 8 Through 12
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
AJCH	Adjunct Instructor For Chemistry, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
WCHI	Provisional Internship Certificate For Teaching Chemistry, Grades 8-12
KBIL	Certificate For Teaching Kentucky Biology Limited, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFCH	Provisional One-Year College Faculty Certificate for Teaching Chemistry, Grades 8-12
C23	Teaching Minor: Geography-Geology
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
C51	Teaching Minor: Biology
C50	Teaching Minor: Science
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CBI	Professional Certificate For College Faculty, Biology, Grades 8-12
CBII	Provisional Internship Certificate For College Faculty, Biology, Grades 8-12
CCH	Professional Certificate For College Faculty, Chemistry, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CCHI	Provisional Internship Certificate For College Faculty, Chemistry, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
KCHL	Certificate for Teaching Kentucky Chemistry Limited, Grades 8-12
X51	Emergency Certificate For Teaching Biology
B53	Teaching Major: Physics
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry
CFBI	Provisional One-Year College Faculty Certificate for Teaching Biological Science, Grades 8-12

304631 - Geology

Grade Level: 9 - 12

Credits: 1

Description: Major concepts addressed in this course include erosion, glaciation, mountain formation, and diastrophism.

Content: Geology

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
TEEA	Temporary Certificate For Earth Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304698 - Principles of Technology with Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop understandings of traditional physics and Earth/space science concepts, as outlined in Kentucky's Program of Studies, through the use of scientific inquiry. Students investigate concepts of force, work, efficiency, rate, and energy. Hands-on inquiry experiences develop problem-solving and critical-thinking skills. Students apply conceptual understandings to industrial, technological, and personal situations. It is suggested that Principles of Technology with Earth/Space Science be taken before either Introductory Chemistry with Earth/Space Science or Introductory Biology with Earth/Space Science.

Content: Earth-Space Science

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B54	Teaching Major: Biology-Health
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science

R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
M50	Endorsement For Teaching Science, Grades 5-8
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12
COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
B51	Teaching Major: Biology
R51	Area Specialization: Science Limited To Biology
R56	Area Specialization: Science Limited To Earth Science
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304699 - Special Topics: Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: The content of this Earth/Space course is determined by the teacher/student.

Content: Earth-Space Science

Population: General

B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B54	Teaching Major: Biology-Health
B52	Teaching Major: Chemistry
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
B57	Teaching Major: Geology
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
M50	Endorsement For Teaching Science, Grades 5-8
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
TEEA	Temporary Certificate For Earth Science, Grades 8-12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
X54	Emergency Certificate For Teaching Earth Science
TPEA	Temporary Provisional Certificate For Teaching Earth Science, Grades 8-12
KEA	Professional Certificate For Teaching Earth Science, Grades 8-12
KEAI	Provisional Internship Certificate For Teaching Earth Science, Grades 8-12

COEA	Conditional One-Year Certificate For Earth Science, Grades 8-12
B51	Teaching Major: Biology
R51	Area Specialization: Science Limited To Biology
R56	Area Specialization: Science Limited To Earth Science
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
CFEA	Provisional One-Year College Faculty Certificate for Teaching Earth Science, Grades 8-12
CEA	Professional Certificate For College Faculty, Earth Science, Grades 8-12
CEAI	Provisional Internship Certificate For College Faculty, Earth Science, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304811 - Aerospace Science

Grade Level: 9 - 12

Credits: 1

Description: In this course, students study conceptual ideas and understandings related to aerospace sciences.

Content: Physics

Population: General

COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B52	Teaching Major: Chemistry
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C57	Teaching Minor: Geology
R53	Area Specialization: Science Limited To Physics
C53	Teaching Minor: Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C56	Teaching Minor: Earth Science
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304821 - Physics I

Grade Level: 9 - 12**Credits:** 1

Description: Students develop a conceptual understanding of physics content through the use of scientific inquiry. They experience concepts such as motions and forces, conservation of energy and the increase in disorder, interactions of energy and matter. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills.

Content: Physics**Population:** General

COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B52	Teaching Major: Chemistry
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C57	Teaching Minor: Geology
R53	Area Specialization: Science Limited To Physics
C53	Teaching Minor: Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C56	Teaching Minor: Earth Science
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304823 - IB Physics

Grade Level: 9 - 12**Credits:** 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. The IB is a two year, highly academic program for juniors and seniors which can lead to their receiving first year course credit at many universities and colleges. Its internationally recognized curriculum provides able and ambitious students with a comprehensive background in Physics.

Content: Physics**Population:** General

COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B52	Teaching Major: Chemistry
B50	Teaching Major: Science

A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C57	Teaching Minor: Geology
R53	Area Specialization: Science Limited To Physics
C53	Teaching Minor: Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C56	Teaching Minor: Earth Science
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304824 - Honors Physics

Grade Level: 9 - 12

Credits: 1

Description: Honors Physics is a one-year high school course for students with career plans in science, math, engineering, medicine, and similar fields. This course provides a track for students who want to learn physics as a high level, but who are not interested in the full AP Physics B program. It is an appropriate choice for students interested in medical careers.

Content: AP Physics

Population: General

CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12

X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C56	Teaching Minor: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304825 - AP Physics C: Mechanics

Grade Level: 9 - 12

Credits: 1

Description: This course ordinarily forms the first part of the college sequence that serves as the foundation in physics for students majoring in the physical sciences or engineering. The sequence is parallel to or preceded by mathematics courses that include calculus. Methods of calculus are used wherever appropriate in formulating physical principles and in applying them to physical problems. The sequence is more intensive and analytic than that in the B course. Strong emphasis is placed on solving a variety of challenging problems, some requiring calculus. The subject matter of the C course is principally mechanics and electricity and magnetism, with approximately equal emphasis on these two areas. The C course is the first part of a sequence which in college is sometimes a very intensive one-year course but often extends over one and one-half to two years, with a laboratory component. NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Physics

Population: General

CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science

C56	Teaching Minor: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304826 - AP Physics C: Electricity/Magnetism

Grade Level: 9 - 12

Credits: 1

Description: This course ordinarily forms the first part of the college sequence that serves as the foundation in physics for students majoring in the physical sciences or engineering. The sequence is parallel to or preceded by mathematics courses that include calculus. Methods of calculus are used wherever appropriate in formulating physical principles and in applying them to physical problems. The sequence is more intensive and analytic than that in the B course. Strong emphasis is placed on solving a variety of challenging problems, some requiring calculus. The subject matter of the C course is principally mechanics and electricity and magnetism, with approximately equal emphasis on these two areas. The C course is the first part of a sequence which in college is sometimes a very intensive one-year course but often extends over one and one-half to two years, with a laboratory component. NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Physics

Population: General

CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C56	Teaching Minor: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304827 - AP Physics B

Grade Level: 9 - 12

Credits: 1

Description: This course provides a systematic introduction to the main principles of physics and emphasizes the development of conceptual understanding and problem-solving ability using algebra and trigonometry, but rarely calculus. In most colleges, this is a one-year terminal course including a laboratory component and is not the usual preparation for more advanced physics and engineering courses. However, the B course provides a foundation in physics for students in the life sciences, pre-medicine, and some applied sciences, as well as other fields not directly related to science. NOTE: If this course is to be used as a graduation requirement it must adhere to the content requirements of the Program of Studies.

Content: AP Physics

Population: General

CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B50	Teaching Major: Science
B52	Teaching Major: Chemistry
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
C53	Teaching Minor: Physics
B53	Teaching Major: Physics
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C57	Teaching Minor: Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C56	Teaching Minor: Earth Science
C23	Teaching Minor: Geography-Geology
C50	Teaching Minor: Science
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304890 - IB Design Technology

Grade Level: 9 - 12

Credits: 1

Description: This course code is applicable only to schools enrolled in the International Baccalaureate program. Design Technology is designed to teach students how to adapt to new experiences, and to approach problems with the appropriate skills and techniques in design, as specified by the International Baccalaureate Organization.

Content: Principles of Technology (Applied Physics)

Population: General

COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
C53	Teaching Minor: Physics
C50	Teaching Minor: Science
C56	Teaching Minor: Earth Science
R53	Area Specialization: Science Limited To Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B52	Teaching Major: Chemistry
C57	Teaching Minor: Geology
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
B53	Teaching Major: Physics
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304898 - Intro Physics with Earth/Space Science

Grade Level: 9 - 12

Credits: 1

Description: Students develop a conceptual understanding of physics and Earth/space science content through the use of scientific inquiry. They experience physics and Earth/space science concepts such as motions and forces, conservation of energy and the increase in disorder, interactions of energy and matter, and energy in the Earth system. A scientific inquiry approach uses concrete hands-on experiences that require students to apply critical thinking skills. For this course, the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Content: Physics

Population: General

COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B52	Teaching Major: Chemistry
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C57	Teaching Minor: Geology
R53	Area Specialization: Science Limited To Physics
C53	Teaching Minor: Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science

C23	Teaching Minor: Geography-Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C56	Teaching Minor: Earth Science
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12
CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry

304899 - Special Topics: Physics/Physics II

Grade Level: 9 - 12

Credits: 1

Description: The content of this Physics course is determined by the teacher/student.

Content: Physics

Population: General

COPH	Conditional One-Year Certificate For Physics, Grades 8-12
B52	Teaching Major: Chemistry
B50	Teaching Major: Science
A50	Area Specialization: Science
A70	Area Specialization: Mathematics-Physical Science
B23	Teaching Major: Geography-Geology
B53	Teaching Major: Physics
C50	Teaching Minor: Science
C57	Teaching Minor: Geology
R53	Area Specialization: Science Limited To Physics
C53	Teaching Minor: Physics
KPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
KPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
B56	Teaching Major: Earth Science
C23	Teaching Minor: Geography-Geology
WPS	Professional Certificate For Teaching Physical Science, Grades 8 Through 12
WPSI	Provisional Internship Certificate For Teaching Physical Science, Grades 8 Through 12
X52	Emergency Certificate For Teaching Chemistry
X53	Emergency Certificate For Teaching Physics
KPHI	Provisional Internship Certificate For Teaching Physics, Grades 8 Through 12
TPPS	Temporary Provisional Certificate For Physical Science, Grades 8-12
WPH	Professional Certificate For Teaching Physics, Grades 8-12
AJPH	Adjunct Instructor For Physics, Grades 8-12
TPPH	Temporary Provisional Certificate For Physics, Grades 8-12
WPHI	Provisional Certificate For Internship For Teaching Physics, Grades 8-12
KPH	Professional Certificate For Teaching Physics, Grades 8-12
R56	Area Specialization: Science Limited To Earth Science
C56	Teaching Minor: Earth Science
CFPH	Provisional One-Year College Faculty Certificate for Teaching Physics, Grades 8-12

CPH	Professional Certificate For College Faculty, Physics, Grades 8-12
CPHI	Provisional Internship Certificate For College Faculty, Physics, Grades 8-12
R52	Area Specialization: Science Limited To Chemistry
C52	Teaching Minor: Chemistry